In the Claims:

Claims 1-17 (Previously cancelled).

18. (Previously added - currently amended) A method for the simultaneous removal of nitrogen oxides and carbonaceous combustion products from gases, said method comprising the steps of:

(a) feeding gases containing nitrogen oxides and carbonaceous combustion products into a reaction chamber which contains a gas permeable bed of an active material which includes a mixed metal oxide material having the general formula $A_{2-x}A^1_xB_{1-y}B^1_yO_4$ wherein the components A A^1 of the mixed metal oxide material are selected from the group consisting of elements comprising La, Sr, Ba and K and the components B B^1 of the mixed metal oxide material are selected from the group consisting of elements comprising Co, Mn, Cr, Cu, Mg and V;

(b) exciting said gases into a plasma state for creating plasma activated species;

(c) moving said gases and activated species through said gas permeable bed of active material; and

(d) exposing said metal oxide material to said gases and activated species for creating catalytic action enhanced by said plasma activated species and causing interaction between and simultaneous removal of said nitrogen oxides and carbonaceous products from said gases.

19. (Previously added - currently amended) The method as defined in claim 18 including the additional step of:

(a) aligning said reactor chamber in-line with ~~the~~ an exhaust system of an internal combustion engine for receiving exhaust gases therefrom.

20. (Previously added - currently amended) The method as

defined in claim 18 including the step of selecting the mixed metal oxide active material from the group consisting of ~~$La_{1.8}BA_{0.2}CuO_4$~~ $La_{1.8}Ba_{0.2}CuO_4$; $La_{1.7}Sr_{0.3}Cu_{0.9}V_{0.1}O_4$; $La_{1.9}K_{0.1}Cu_{0.7}Cr_{0.3}O_4$; $La_{1.8}Ba_{0.2}Cr_{0.7}V_{0.3}O_4$ and $La_{1.9}K_{0.1}Cu_{0.95}V_{0.05}O_4$.

21. (Previously added) The method as defined in claim 20 including the step of making said metal oxide material in the form of an agglomeration of bodies in the form of spheres, regularly or irregularly shaped pellets or hollow extrudates.

22. (Previously added) The method as defined in claim 21 including the step of exciting said gases into a plasma state separate from and preceding the bed of mixed metal oxide active material.

23. (Previously added - currently amended) A plasma assisted reactor for the simultaneous removal of nitrogen oxides and carbonaceous combustion products from exhaust gases, comprising a reactor chamber adapted to be connected into a gas exhaust system, a gas permeable bed of an active material contained within the reactor chamber, conduit for causing exhaust gases to pass through the bed of active material, and means for exciting into a plasma state exhaust gases passing through the bed of active material for creating plasma activated species and causing interaction between and simultaneous removal of said nitrogen oxides and carbonaceous combustion products, the bed of active material including a mixed metal oxide material having the general formula $A_{2-x}A^1_xB_{1-y}B^1_yO_4$ wherein the components A A^1 of the mixed metal oxide material are selected from the group consisting of elements comprising La, Sr, Ba and K and the components B B^1 of the mixed metal oxide material are selected from the group consisting of elements comprising Co, Mn, Cr, Cu, Mg and V.

24. (Cancelled).

25. (Previously added - currently amended) A reactor according to claim ~~24~~ 23, wherein the mixed metal oxide active material is selected from the group consisting of ~~$La_{1.8}Ba_{0.2}CuO_4$~~ $La_{1.8}Ba_{0.2}CuO_4$; $La_{1.7}Sr_{0.3}Cu_{0.9}V_{0.1}O_4$; $La_{1.9}K_{0.1}Cu_{0.7}Cr_{0.3}O_4$; $La_{1.8}Ba_{0.2}Cr_{0.7}V_{0.3}O_4$ and $La_{1.9}K_{0.1}Cu_{0.95}V_{0.05}O_4$.

26. (Previously added) A reactor according to claim 25, wherein said means for exciting the gases to the plasma state comprises at least two electrodes in contact with the bed of active material and means for applying to the electrodes a potential difference sufficient to excite the exhaust gases to a plasma state in the interstices of the bed of active material.

27. (Previously added - currently amended) Apparatus for the simultaneous removal of nitrogen oxides and carbonaceous combustion products from gases, said apparatus comprising a reaction chamber, means for feeding gases containing nitrogen oxides and carbonaceous material into said reaction chamber, said reaction chamber containing a gas permeable bed of an active material which includes a mixed metal oxide material having the general formula of $A_{2-x}A^1_xB_{1-y}B^1_yO_4$ wherein the components A A^1 of the mixed metal oxide material are selected from the group consisting of elements comprising La, Sr, Ba and K and the components B B^1 of the mixed metal oxide material are selected from the group consisting of elements comprising Co, Mn, Cr, Cu, Mg and V; means for exciting said gases into a plasma state for creating plasma activated species through said gas permeable bed of active material; and means for exposing said mixed metal oxide material to said gases and activated species for creating catalytic action enhanced by said plasma activated species and causing interaction between

and simultaneous removal of the nitrogen oxides and carbonaceous products from said gases.

28. (Previously added - currently amended) A reactor according to claim 27, wherein the mixed metal oxide active material is selected from the group consisting of ~~$La_{1.8}BA_{0.2}CuO_4$~~ $La_{1.8}Ba_{0.2}CuO_4$; $La_{1.7}Sr_{0.3}Cu_{0.9}V_{0.1}O_4$; $La_{1.9}K_{0.1}Cu_{0.7}Cr_{0.3}O_4$; $La_{1.8}Ba_{0.2}Cr_{0.7}V_{0.3}O_4$ and $La_{1.9}K_{0.1}Cu_{0.95}V_{0.05}O_4$.